**Practical Assignment**

**Module name: Introduction to Databases and Resources**

**Session name: Advanced Literature Searching**

**Trainer: Shaun Aron**

**Participant:** <*write your name here>*

**Date:** <*write today’s date here*>

**Advanced Literature Searching**

**Introduction**

Task 1 is a recap of the PubMed advanced search query builder. There are no questions for this task but you are welcome to take your own notes as you run through this task.

Please provide answers for Task 2 in this document.

**Tools used in this session**

NCBI [www.ncbi.nlm.nih.gov/pubmed](http://www.ncbi.nlm.nih.gov/pubmed)

**Please note**

* **Hand-in information** If you are formally enrolled in the IBT course, please upload your completed assignment to the Vula ‘Assignments’ tab. Take note of the final hand-in date for each assignment, which will be indicated on Vula.

**Task 1: Understanding PubMed Advanced Searching**

**Task 1: Instructions**

Go to <http://www.ncbi.nlm.nih.gov/> and choose the PubMed link. PubMed is a bibliographical database run by the NCBI covering a wide range of biomedical literature, including bioinformatics. PubMed coverage includes MEDLINE. NCBI also provides a very powerful way of searching the literature. Doing simple searches is easy, but it is worth knowing about some of the powerful features that are available, particularly as the same interface can be used for other parts of the NCBI site. Remember that often finding useful things is easy to do — the problem is not being swamped by irrelevant things. There are a few useful videos and help pages available via the PubMed quick start link on the PubMed homepage.

There are a number of options that can be selected to control searching strategies. A simple search can be conducted using the search box on the PubMed homepage, however the advanced search tab provides options for more specific searches.

• **PubMed Advanced Search Builder**: This is the most important section and is where you can build up your query. You can create a query using a search term and field and then add it to the query box. Based on the Boolean term used you can choose to include and exclude terms searching specific fields.

• **Filters**: this has useful features for restricting a group of searches. There is some overlap between the *Filters* and *Search Builder*, but usually you should use *Search Builder* where you can and use *Filters* where you can’t. Also Filters is useful when you want to affect how a group of searches is done. If you do set filters, don’t forget you have done so! Filters stay in place unless you change them. You can remove a filter by clicking on the tick next to it.

• History: shows all the searches you have done. The details section provides further details on the query that was run for the search, while the action column allows you to add the query to the search box again, delete or save your particular search query.

**Builiding a search query**

Click on the advanced search link. You can now add terms to your search by selecting which fields you want to search, and what terms/words/phrases you want to use. By using AND, OR and NOT you can build up complex queries in the query box. Have a look at the fields you can choose. The show index button button will provide suggestions for search terms that you start typing. Note that when you do a search, PubMed tells you how many papers were found in the history table. If you click on the number found, the details of the papers are shown.

**Task 2: Searching PubMed using the Advanced Search Query Builder**

**Task 2: Instructions**

Each of the following examples should be conducted **as individual** search! Copy and paste the search query that you generated for each search and the number of results for questions 1 - 6.

**Example of a search query and number of results : *((FOXP2[Title/Abstract]) AND mutation[Title/Abstract]) AND language disorders[Title/Abstract] - 12 results***

1. Any article dealing with *ostrich*
2. Articles authored by T Hubbard (Careful: do you put this as *Hubbard T* or *T Hubbard*?)
3. Articles authored since 2003 by the T Hubbard who works at the Sanger Institute
4. An article by H.H.Erdemir published in 2014 in the journal *J Biol Chem*
5. Articles about schizophrenia risk (mentioned in the title), published in a journal called *Epigenomics*, written by authors from the University of Cambridge. Provide the citation/s in plain text format.
6. You would like to conduct a search for articles about cancer in children. Search the MeSH database at NCBI to find out what the best keywords are to use for both cancer and children when building up your search query.

**Filters**

Before setting any filters, using the advanced search page, search for papers that deal with ***myopia***.

1. Copy and paste your search query. How many papers are found?

Now set Filters to limit the search to clinical trials involving human males and where there are links to free full text papers. How many papers do you retrieve once the filters have been set?

1. Summarise the difference between setting restrictions using *Filters* and using the features of the advanced search page?

Remember Filters remain set until they are turned off!

**Other features**

* Bring up the details of the papers found in the last search you did by clicking on the number of papers found.
* Look at the options for sending output to a file, to text, to email and so on.
* Select the top 3 papers. Add them to the clipboard. Check under *Clipboard* to see them.

**Task 2: participant’s answer**

<*start typing your answer here*>

**MyNCBI**

Go to MyNCBI and register <http://www.ncbi.nlm.nih.gov/sites/myncbi/>. There are tutorials on how to use this. The most useful features are:

* Saving search results. Once registered and logged in you can create and save search results to specific collections. This is useful since you are able to create collections to store the search results for different aspects of your research.
* Saving search queries. Useful if you wish to run the same or related searches over a period of time.
* Saving BLAST search results and options used. i.e. the particular BLAST program used, the parameters, the database searched and the query sequence